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FOREST INSECT INVESTIGATIONS

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FOREST INSECT SURVEY - SEASON OF 1947
ELDORADO NATIONAL FOREST, CALIFORNIA, AND ADJACENT TIMBER LANDS

by

John E. Patterson
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SEASON OF 1947

Approved by:

F. P. Keen

Entomologist, In Charge

Submitted by:

John E. Patterson

Entomologist

Forest Insect Laboratory
341 Giannini Hall, U. C.
Berkeley 4, California

FOREST INSECT SURVEY
ELDORADO NATIONAL FOREST, CALIFORNIA, AND ADJACENT TIMBER LANDS
SEASON OF 1947

FIELD EXAMINATION.

Personnel: John E. Patterson, Entomologist, Forest Insect Laboratory, Berkeley, California; and Donald Knowlton, Assistant State Ranger, Camino, California. Verbal reports on conditions in certain areas within Eldorado National Forest by John M. Miller of the Berkeley laboratory, and by John M. Buck and H. B. Miller of the Eldorado forest were of great value in appraisal of conditions on sections not examined by the survey party.

Date: October 29 to November 3, 1947.

Methods: Measurments of roadside plots and survey of established study plots, supplemented by ground reconnaissance in commercial stands and general examination of recreational areas.

AREAS EXAMINED.

The survey covered all of the pine type below the alpine belt on the west side of the Sierra divide and the regions about Lake Tahoe. It included the following local districts:

1 - Georgetown
2 - American River Canyon
3 - Consumnes
4 - Armstrong
5 - Lake Valley

MOST IMPORTANT INSECT PROBLEMS FOUND.

Current insect activity was largely confined to ponderosa pine and lodgepole pine. Excepting second growth ponderosa pine stands in the lower forest belt, infestations in both species were endemic, resulting in losses of a low normal type. However, in the second growth stands conditions were in striking contrast. Here both Ips and Dendroctonus beetles in combined attacks developed infestation centers principally around burns and logging slash which in some cases aggregated 25 to 50 attacked trees. These grumpattacks constituted the most important insect problems found in the 1947 survey.

INSECTS RESPONSIBLE FOR PINE LOSSES IN 1946 - 1947.

As in previous years barkbeetles continued to be the primary agents in causing pine losses. Damage to ponderosa pine was caused by the California five-spined engraver beetle (Ips confusus) and the western pine beetle (Dendroctonus brevicomis). Damage to sugar pine resulted from attacks of the mountain pine beetle (Dendroctonus monticolae); the same species also attacking lodgepole pine. Attacks on Jeffrey pine were made by the Jeffrey pine beetle (Dendroctonus jeffreyi), and the western pine engraver (Ips emarginatus).

CHARAXTER OF THE 1946 AND 1947 BARKBEETLE INFESTATIONS.

Infestations in the second growth pine belt (below 4,000 feet) were characterized by group killings induced and aggravated by logging slash and summer fires. Of these groups those containing more than 40 trees signify epidemic conditions, but since such groups were widely scattered the aggregate loss will not support this status throughout these stands. Elsewhere losses were definitely endemic. Endemic conditions prevailed in the higher elevation pine forests where widely scattered single infested trees was the rule. Infestations in lodgepole pine were confined to two recreational areas i n the Lake Tahoe section. They were of low endemic character with resultant losses well below those of the two preceding years in the same stands.

TREND OF BARKBEETLE INFESTATIONS.

To secure basic data for determining the trend of annual barkbeetle infestations a series of sample roadside strips and survey plots were set up in the 1946 survey. These same plots were again surveyed in 1947. Measurments of annual losses on these plots made it possible to chart the trend of infestations for the past three years. These losses are also indicative of the intensity of yearly infestations. Evaluation of these data show that the trend during these years remained fairly constant.

INSECT LOSSES ON SAMPLE PLOTS, 1946 AND 1947.

Data in the following table is a summary of barkbeetle losses for the two year period covered by surveys. However, the loss data for 1947 is incomplete since not all infested trees had faded at the time the survey was made. This partial data is indicated by (*).

Survey plot	Acres	spp.	Number of trees killed 1946 Trees	1946 Vol.BM	1947* Trees	1947* Vol.BM	B/F loss per acre 1946	1947*
Tunnel Hill RD	180	PP	7	5,350	4	6,440	30	36
Pino Grande RD	200	PP	10	11,870	7	4,540	59	22
Consumnes RD	300	PP	9	3,660	16	3,800	12	13
South Fork RD	200	PP	9	4,950	11	6,200	25	31
Grizzly RD	300	PP	3	2,520	4	3,200	8	10
Armstrong RD	400	PP	12	19,680	4	5,800	49	15
Bottle Hill RP	40	PP	18	2,330	1	100	58	3
Slate Mtn. RP	40	PP	7	3,130	1	1,840	78	46
	1,660			53,490		31,920	32	20

CURRENT CONDITIONS ON INFESTATION UNITS.

In previous reports infestation conditions on this forest were discussed by working circles. However, since areas outside the National Forest hace been added, that scheme is no longer adequate. Hence in this report conditions are reported by infestation units as follows:

1 - Georgetown: Insect losses in 1946 were of a high normal rate which have continued unabated through 1947.

Estimated rate of pine loss - board feet per acre

1945	20
1946	30
1947	35

2 - Rubicon: This unit was not examined by the survey party: John Buck of the Eldorado forest made observations on the infestations throughout the season reporting that conditions were not changed from 1946. This information indicates a static condition with yearly losses of about 15 board feet per acre for each of the years 1945 to 1947.

3 - Silver Creek-American River Canyon: Conditions on this unit were reported by J. M. Miller as being static. He received a verbal report from Henry Trask who reported a few late summer groups of 4 to 6 ponderosa pine trees appeared on southern exposures in American River canyon. The amount of loss was very light, however, and no significant trend is indicated.

Estimated rate of pine loss - Board feet per acre

1945	18
1946	15
1947	15

4 - Consumnes: Timber stands of this unit are composed largely of second growth stock. Sporadic logging and summer fires have aggravated infestation conditions in these stands and have fostered yearly group flareups which, however, have been of short duration.

Estimated rate of pine loss - board feet per acre

1945	15
1946	20
1947	25

5 - Amador: Conditions on this unit closely parallel those of Consumnes unit.

Estimated rate of pine loss - board feet per acre

1945	15
1946	22
1947	25

6 - Armstrong: This unit lies at higher elevations than the two preceding and the remaining timber stands are largely composed of larger, mature, trees. During the period 1945 to 1947 beetle killed trees have generally occurred singly and widely separated. There has been little tendency toward grouping.

Estimated rate of pine loss - board feet per acre

1945	20
1946	30
1947	22

7 - Conditions on recreational areas: (Lake Valley and SW Tahoe) Infestations on these areas were reported by H. B. Miller of Eldorado National Forest. No change from the endemic conditions found in 1946 was noted throughout the Jeffrey pine stands on either of these areas. If anything, the 1947 loss will show some decrease. This same situation applies to the lodgepole pine stands. The group centers of mountain pine beetle infestations in lodgepole at Cascade Lake persists but has not grown larger or increased its damage. The center at Osgood Swamp has greatly cleared up through an administrative sale of the infested trees and therefore has ceased to be a menace to the remaining stands. Very little loss was sustained during the year at Echo Lake.

INSECT CONTROL RECOMMENDATIONS.

Since insect conditions have largely remained static on this survey area during 1947 and losses on any important area have not increased above the normal drain for these forests, control by direct methods is not warranted and is not recommended.

Distribution

1 - R.O
2
1 - FCC
1 - Supervisor Eldorado
2 - Dep State Forester
1 - Patterson